



AMERICAN MADE

Mobile 2 Meter FM Transceiver

Here is what the 2 meter, FM Ham World has been asking for.

Specifications: 90 day warranty

RECEIVER	TRANSMITTER
The HR-2 receiver is a double conversion, superhetrodyne with highly selective ceramic filter.	The HR-2 transmitter uses phase modulation for the ultimate in carrier stability. Built in SWR load mismatch circuitry provides protection against open and shorted antenna conditions.
Frequency Range...144-148 MHz	Frequency Range...144-148 MHz
Sensitivity.....0.35 μ v (nom.) 20DB Quieting	Power Output.....10 Watts (min.) @ 13.6 VDC
Selectivity.....6DB Down \pm 16KC 50DB Down \pm 32KC	Modulation.....Phase Modulation with automatic deviation limiting
Audio Output (3-4 Ω Speaker)....3 Watts 10% Distortion 5 Watts Maximum	Deviation.....Automatic Limiting with internal adjustments from 0-15KC deviation
Channels.....6 Crystal controlled with provision for adding an additional 6 channels	Microphone.....Plug-in, hand held, high Z Ceramic supplied
I.F. Frequencies.....10.7 MHz & 455KHz	Channels.....6 Crystal controlled with individual trimmer capacitors for Frequency netting

GENERAL

Power Requirements 13.6 Volts (nominal)
 Receive (Squelched) 180 MA.
 Receive (Max. audio output).....800 MA.
 Transmit.....2.5 Amps (max.)

STANDARD EQUIPMENT

Built-in 4" Speaker
 Mobile Mounting Bracket
 SO-239 Antenna Connector Socket
 T & R Crystals for 146.94 MHz
 PTT Ceramic Mike

only **\$229⁰⁰** Amateur Net

ELECTRONICS, INC.

7900 Pendleton Pike, Indianapolis, Indiana 46226

This is actual size and shape of our radio. Cut it out and place it under your dash to see how compactly it fits.

CQ Reviews:

The Regency HR-2 Transceiver

BY GLEN E. ZOOK,* K9STH

The number of amateurs operating on v.h.f. f.m. in the United States and Canada has increased rapidly in the past few years. During most of this time operation has been with obsolete commercial units released from police, taxi, and other services. Within the past two years a number of solid-state v.h.f. f.m. units designed for use by the amateur radio operator have been introduced by manufacturers both foreign and domestic. The Regency HR-2 is a good example of the equipment being manufactured within the United States for the f.m. minded amateur. It is compact, versatile, and has sufficient power for most serious and all casual f.m. work.

General

The Regency HR-2 transceiver is designed for operation on the 2 meter (144-148 mc) amateur band. Both receive and transmit frequencies are crystal controlled on each channel. The receiver is a dual conversion superheterodyne with a ceramic filter for adjacent channel rejection. The transmitter utilizes phase modulation (as do most units for commercial use) with an output of 10 watts or more. The unit comes equipped with a mounting bracket for under-the-dash use and a length of cable for power application (12 volt negative ground). Accessories include a cigarette lighter plug (Regency MA-10, not supplied) for easy attachment to the automobile electrical system, and a good quality high-impedance

ceramic microphone and connector (supplied).

Technical Details

The HR-2 employs complete solid state circuitry, including the following:

Integrated Circuits	2
Silicon Transistors	21
Silicon Balanced Emitter Trans	2
Zener Diodes	2
Varicap Diodes	2
Small Signal Diodes	3
Field Effect Transistor	1
Total devices	<u>33</u>

Of these devices 13 transistors, 2 integrated circuits, and one zener diode are utilized in the receiver section. All remaining devices are used in the transmitting section.

Receiver

The receiver is a 6 channel crystal controlled superheterodyne dual conversion unit. Basic sensitivity for 20 db quieting is a claimed 0.35 microvolts nominal. Audio output at 4 ohms and 10% distortion is 3 watts, with a maximum output of 5 watts. All transistors and integrated circuits appear to be manufactured by Motorola, but some devices are marked only with a color code. The color coding on these devices are similar to those on devices manufactured by Motorola and used in their own communications equipment.

The r.f. amplifier stage of the HR-2 receiver section is a bi-polar silicon transistor. This transistor has no JEDEC number stamped on it, only color coding. The 50 ohm input is matched through a tapped, slug-tuned coil. The signal is applied to the base of the r.f. amplifier through a second tuned stage. The output of the amplifier is then fed through 2 tuned circuits to the base of the mixer transistor, (apparently identical to the r.f. amplifier transistor, thus indicating a good, low noise, high frequency silicon transistor).

The oscillator section utilizes a 2N5130 as an overtone oscillator-multiplier. The crystals are 45 mc overtone types which are switched for channel selection. No provisions are made for warping or "rubbering" the receive crystals to



The Regency HR-2 2-meter f.m. transceiver.

*FM Editor, CQ.

excellent. Good quality printed circuit boards with immersion tin plating are used throughout. All solder connections were excellent with no resin residue. The only criticisms which can be justified are, first, the "Mickey-Mouse" mounting of the pilot lamp. This lamp is held in place by a spring clip which makes the ground connection. The center connection (hot side) is soldered to the bulb making easy replacement impossible. The second criticism is the placement of the microphone jack on the left side of the chassis. When the unit is installed in an automobile there is a distinct chance of the protrusion of the microphone plug interfering with the right leg of the driver. This plug, along with the beginning of the coiled cord project over three inches beyond the side of the unit. This, however, can be overcome by replacing the plug with a Switchcraft 230 (or equivalent) "Flat Plug." This type of plug protrudes less than 1/2" from the side of the unit, and the microphone cord comes out at 90° from the shank of the plug. Thus, the

interference with the driver can be avoided.

Conclusion

Basically the Regency HR-2 is a high-quality transceiver for use by the amateur f.m.'er. The power output is sufficient for normal direct contacts as well as those contacts made through repeaters. The six channel capabilities along with the built-in strapping options to allow pairing of various crystals gives the amateur f.m.'er the versatility needed while travelling through areas with repeaters on frequencies other than 146.34/146.94 or 146.34/146.76 mc. The HR-2 was not designed to compete with the high-priced commercial equipment, but in many cases it can do the same job as those units in its power class. The expenditure of \$229.00 including crystals for simplex operation on 146.94 mc is well worth considering. The manufacturer is Regency Electronics, Inc., 7900 Pendleton Pike, Indianapolis, Ind. 46226.

-K9STH
